

AMENDMENT(S) TO THE CLAIMS

1. (Currently Amended) An optical interconnect for a fiber optic system,
2 comprising:

an optoelectronic device selected from the group consisting of a top emitting vertical
4 cavity surface emitting laser (VCSEL) and a bottom emitting VCSEL ; and

a penetrator made of a suitable optically transmissive material optically coupled to the
6 optoelectronic device and configured for insertion along the length of an optical fiber for
transferring light between the optical fiber and the optoelectronic device.

2. (Original) The interconnect of Claim 1 wherein the penetrator has a pyramidal
2 shape.

3. (Original) The interconnect of Claim 1 wherein the penetrator has a conical
2 shape.

4. (Original) The interconnect of Claim 1 wherein the penetrator is etched into the
2 substrate of the optoelectronic device.

5. (Canceled)

6. (Original) The interconnect of Claim 1 wherein the penetrator has at least one
2 wall coated with a material that minimizes reflection of light back into the optoelectronic device.

7. (Original) The interconnect of Claim 1 wherein the penetrator has at least one
2 wall coated with a material that facilitates coupling of light from the optoelectronic device to the
optical fiber.

8. (Original) The interconnect of Claim 1 and further comprising an optical fiber
2 having the penetrator pierced therein to optically couple the optoelectronic device and the
optical fiber.

9. (Currently Amended) The interconnect of Claim 8 and further comprising an
2 encapsulation layer at least partially surrounding the optoelectronic device ; and the penetrator
and/or optical fiber .

10. (Original) The interconnect of Claim 1 and further comprising a plastic optical
2 fiber, and wherein the penetrator is inserted along the length of the plastic optical fiber at least
halfway across a diameter of the optical fiber.

11. (Currently Amended) A ~~An~~ parallel optical interconnect for a fiber optic system,
2 comprising:

a plurality of optoelectronic devices arranged in a linear array selected from the group
4 consisting of a top emitting vertical cavity surface emitting laser (VCSEL) and a bottom emitting
VCSEL ; and

6 a plurality of penetrators each made of a suitable optically transmissive material and
optically coupled to a corresponding one of the optoelectronic devices and configured for
8 insertion along the length of a corresponding plastic optical fiber of a side-by-side array of a
plurality of plastic optical fibers for transferring light between the optical fibers and the
10 corresponding optoelectronic devices.

12. (Original) The interconnect of Claim 11 wherein each penetrator has a pyramidal
2 shape.

13. (Original) The interconnect of Claim 11 wherein each penetrator has a conical
2 shape.

14. (Currently Amended) The interconnect of Claim 11 ~~+~~ wherein each penetrator
2 is etched into a substrate of a corresponding optoelectronic device.

15. (Canceled)

16. (Original) The interconnect of Claim 11 wherein each penetrator has at least one
2 wall coated with a material that minimizes reflection of light back into the corresponding
optoelectronic device.

17. (Original) The interconnect of Claim 11 wherein each penetrator has at least one
2 wall coated with a material that facilitates coupling of light from the optoelectronic device to the
corresponding optical fiber.

18. (Original) The interconnect of Claim 11 and further comprising a plurality of
2 optical fibers each having a corresponding one of the penetrators pierced therein to optically
couple each optoelectronic device to its corresponding optical fiber.

19. (Currently Amended) The interconnect of Claim 18 and further comprising an
2 encapsulation layer at least partially surrounding the optoelectronic devices ; and the penetrators
and/or optical fibers.

20. (Original) The interconnect of Claim 11 wherein the optoelectronic devices are
2 attached to a support selected from the group consisting of a common ceramic substrate, a
common silicon substrate and a common integrated circuit.

21. (Canceled)

22. (New) An optical interconnect for a fiber optic system, comprising:
2 an optoelectronic device; and
a penetrator made of a suitable optically transmissive material etched into a substrate of
4 the optoelectronic device, the penetrator being optically coupled to the optoelectronic device and
configured for insertion along the length of an optical fiber for transferring light between the
6 optical fiber and the optoelectronic device.

23. (New) An parallel optical interconnect for a fiber optic system, comprising:
2 a plurality of optoelectronic devices arranged in a linear array; and

a plurality of penetrators each made of a suitable optically transmissive material and
4 etched into a substrate of a corresponding one of the optoelectronic devices, the penetrators
being optically coupled to the corresponding optoelectronic devices and configured for insertion
6 along the length of a corresponding plastic optical fiber of a side-by-side array of a plurality of
plastic optical fibers for transferring light between the optical fibers and the corresponding
8 optoelectronic devices.